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09/744,081	03/20/2001	Andrew Aftelak	CE0144UM	2182

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EXAMINER
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LE, DUY K

ART UNIT	PAPER NUMBER
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2685

DATE MAILED: 10/27/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/744,081

Applicant(s)

AFTELAK ET AL.

Examiner

Duy K Le

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3. 6) ☐ Other:

DETAILED ACTION

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular, when the claim describes “means for receiving the dynamic system information and means for selecting a preferred value of at least one characteristic of the communication system (100) in response to the dynamic system information”, it is not clear that that the characteristic relates to and comes from the dynamic system information.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-4, 7, 10-11, 15-16, and 19-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Horneman et al. (U.S. Patent 6,560,460).

As to claim 1, Figure 1 in Horneman shows a communication system (100) including a communication network (110) performing at least one communication with at least one

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subscriber unit (120, 122, 124, 126) over a radio communication link (130, 132, 134, 136), the communication system (100) having a plurality of different characteristics and characterized by comprising:

means for transmitting dynamic system information relating to the status of the communication system (100) from the communication network to the at least one subscriber unit (“the simplest way of implementing the invention is to provide the control unit 430 (Figure 4) with software which in addition to its standard operations can determine the service class for each radio link 130-136 according to the method and signal the service class in question to the mobile station 120-126 via the base station 240” (Col. 4, line 66 to Col. 5, line 4)), and

the at least one subscriber unit comprising means for receiving the dynamic system information and means for selecting a preferred value of at least one characteristic of the communication system (100) in response to the dynamic system information (“the mobile station is arranged to receive the grade of service from the network part” (Col. 2, lines 6-8). “According to the invention, the grade of service is divided into service classes according to the grade of service guaranteed by the mobile telephone system 100 to a user 140-146 of a mobile station 120-126 on the basis of the conditions of the mobile telephone system 100. The service classes comprise e.g. speech, data transmission, high-rate data transmission and video” (Col. 2, lines 55-61). “The user, if he so desires, can select the service class that is most suitable and economical for him” (Col. 2, lines 22-23)), and

means for setting the at least one characteristic of the communication system (100) to said preferred value of the at least one characteristic (“if the conditions of the mobile telephone

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system 100 allow several different service classes, the user 140-146 selects the one which is the most economical and suitable for him” (Col. 2, lines 64-67)).

As to claim 2, the Horneman reference discloses a communication system (100) as claimed in claim 1 wherein the at least one characteristic of the communication system (100) is a characteristic of the communication between the communication network and the at least one subscriber unit (see Col. 3, lines 1-31, “transmission capacity”).

As to claim 3, the Horneman reference discloses a communication system (100) as claimed in claim 1 wherein the means for setting the at least one characteristic of the communication system (100) to said preferred value is located in the subscriber unit (“if the conditions of the mobile telephone system 100 allow several different service classes, the user 140-146 selects the one which is the most economical and suitable for him” (Col. 2, lines 64-67)).

As to claim 4, the Horneman reference discloses a communication system (100) as claimed in claim 1 wherein the means for setting the at least one characteristic of the communication system (100) to said preferred value is located in the network (“if the amount of available transmission capacity is sufficient, the new user 146 will be assigned a bidirectional radio link 136 according to his class” (Col. 3, lines 11-14)).

As to claim 7, the Horneman reference discloses communication system (100) as claimed in any claim 1 wherein the dynamic system information is transmitted to individual subscriber units (“The simplest way of implementing the invention is to provide the control unit 430 (Figure 4) with software which in addition to its standard operations can determine the service class for

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each radio link 130-136 according to the method and signal the service class in question to the mobile station 120-126 via the base station 240” (Col. 4, line 66 to Col. 5, line 4)).

As to claim 10, the Horneman reference discloses a communication system (100) as claimed in claim 1 wherein the subscriber units further comprises means for presenting the dynamic system information to the user (“the mobile station 120-126 is arranged to indicate the grade of service to the user 140-146 in a clear form. Thus the service class is indicated to the user in an understandable form, e.g. as a text, picture, tone or in some other manner known from the prior art” (Col. 5, lines 56-60)).

As to claim 11, the Horneman reference discloses a communication system (100) as claimed claim 1 wherein the subscriber units further comprise means for receiving a user input and the at least one characteristic of the communication between the subscriber unit and the network is determined in response to this user input (“the mobile station 120-126 is arranged to provide the user 140-146 with the possibility of selecting the grade of service that is the most economical and suitable for him. At its simplest the control unit 550 has software which receives the grade of service selected by the user 140-146 by means of his keyboard 506” (Col. 5, line 67 to Col. 6, line 5)).

As to claim 15, the Horneman reference discloses a communication system as claimed in claim 1 further comprising:

means for the subscriber unit to request the network to change the at least one characteristic of the communication system (“if the conditions of the mobile telephone system 100 allow several different service classes, the user 140-146 selects the one which is the most economical and suitable for him” (Col. 2, lines 64-67), and

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means for the network to change the at least one characteristic of the communication system in response to said request ("if the amount of available transmission capacity is sufficient, the new user 146 will be assigned a bidirectional radio link 136 according to his class" (Col. 3, lines 11-14)).

As to claim 16, the Horneman reference discloses a communication system, as claimed in claim 15, wherein a distribution of resource is changed ("if the amount of available transmission capacity is sufficient, the new user 146 will be assigned a bidirectional radio link 136 according to his class. If the amount of available transmission capacity is insufficient, the service class of the user 140-144 in question will be lowered, i.e. the service class is changed to correspond to the transmission capacity utilized by the user 140-144 in question" (Col. 3, lines 11-21)).

As to claim 19, Figure 1 in Horneman shows a communication system, as claimed in claim 1, which is a cellular mobile communication system and the subscriber units are mobile stations ("FIG.1 generally shows a mobile telephone system of the invention. The mobile telephone system 100 comprises a network part 110, mobile station 120-126 and bidirectional radio links 130-136 between the network part 110 and mobile stations 120-126" (Col. 2, lines 50-54)).

As to claim 20, the Horneman reference discloses a communication system, as claimed in claim 19, which is a GSM cellular mobile communication system ("with respect to further development of the present GSM/DCS 1800 system and the UMTS system under development" (Col. 1, lines 24-25)).

As to claim 21, what is cited in claim 1 corresponds and applies to the method in claim 21.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 5, 8-9, 12-14, and 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,560,460 to Horneman et al. in view of Vazvan et al. (WO 96/28947).

As to claims 5 and 22, the Horneman reference discloses a communication system as claimed in claim 1 and a method as claimed in claim 21. However, it does not disclose the dynamic system information is broadcast to all subscriber units. The Vazvan reference teaches the dynamic system information is broadcast to all subscriber units ("the PQ selection of a multimode terminal can automatically (alternately) listen to the signals of various mobile networks and change to a desired channel when moving from a cell to a satellite beam or vice versa. In other words, the PQ selection system hops from a frequency band to another, implementing a kind of frequency hopping concept, and listens to the appropriate information (prices), compares it with the transmission quality and makes the selection according the desired level (price/quality or quality/price) as determined by the user" (page 8, lines 12-19)).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the communication system and method of Horneman wherein the dynamic system information is broadcast to all subscriber units, as taught by Vazvan, in order to allow all subscriber units access to the dynamic system information simultaneously.



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As to claims 8 and 23, the Horneman reference discloses a communication system as claimed in claim 1 and a method as claimed in claim 21, wherein the dynamic system information transmitted includes a characteristic chosen from the group of a traffic load, a resource allocation, a traffic mix, the location of the subscriber units, the capabilities of subscriber units active in the system, the capabilities of the network, the available resources of the network ("the parameters of the method are the velocity of the mobile station 120 with respect to the base station 240, the distance of the mobile station 120 from the base station 240, the load of the mobile telephone system 100 and the cell 242 type of the base station 240 providing the bidirectional radio link 130. The parameter of velocity is examined as the absolute velocity, the parameter of distance in proportion to the cell size of the base station 240, the parameter of load in proportion to the total capacity of the cell 242 and the parameter of cell type by utilizing existing hierarchical structures" (Col. 3, lines 50-61). "Another way of optimizing the use of the network part is to check how much transmission capacity of the network part 110 has available" (Col. 3, lines 7-9). "According to the invention, the grade of service is divided into service classes according to the grade of service guaranteed by the mobile telephone system 100 to a user 140-146 of a mobile station 120-126 on the basis of the conditions of the mobile telephone system 100. The service classes comprise e.g. speech, data transmission, high-rate data transmission and video" (Col. 2, lines 55-61)). However, it does not disclose the dynamic system information transmitted includes a tariff, availability of service providers, capability of service providers, availability of other communication systems, capability of other communication systems, and available services.

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The Varzan reference teaches the dynamic system information transmitted includes a tariff, availability of service providers, capability of service providers, availability of other communication systems, capability of other communication systems, and available services (“a mobile terminal (43) decides on a handover include, in addition to the quality of the connection, at least one other parameter. The parameter may be e.g. price, capacity, transmission speed, and availability (Abstract). See also page 11, lines 4-14. “The mobile invoicing system also includes an invoice information controller (IIC) which arranges the customer-specific invoices and debits the users’ smart cards etc. and controls the tariffs (page 17, lines 10-12)).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the communication system and method of Horneman wherein the dynamic system information transmitted includes a tariff, availability of service providers, capability of service providers, availability of other communication systems, capability of other communication systems, and available services, as taught by Vazvan, in order to provide users with necessary information to select appropriate criteria for their needs.

As to claims 9 and 24, the Horneman reference discloses a communication system as claimed in claim 1 and a method as claimed in claim 21, wherein at least one characteristic of the communication system is chosen from the group of: time of communication, communication needs, a prioritization of communication, a communication format (“According to the invention, the grade of service is divided into service classes according to the grade of service guaranteed by the mobile telephone system 100 to a user 140-146 of a mobile station 120-126 on the basis of the conditions of the mobile telephone system 100. The service classes comprise e.g. speech, data transmission, high-rate data transmission and video” (Col. 2, lines 55-61). “The user, if he

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so desires, can select the service class that is most suitable and economical for him” (Col. 2, lines 22-23)). However, it does not disclose the characteristics include a data rate, a service provider, a communication system, a service, and a handover.

The Vazvan reference teaches the characteristics include a data rate, a service provider, a communication system, a service, and a handover (“a mobile terminal (43) decides on a handover include, in addition to the quality of the connection, at least one other parameter. The parameter may be e.g. price, capacity, transmission speed, and availability (Abstract). See also page 11, lines 4-14).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the communication system and method of Horneman wherein at least one characteristic of the communication system is chosen from the group of a data rate, a service provider, a communication system, a service, and a handover, as taught by Vazvan, in order to allow users to select appropriate characteristics for their needs.

As to claims 12-13 and 25, the Horneman reference discloses a communication system as claimed in claim 1 and a method as claimed in claim 21. However, it does not disclose the subscriber units further comprise means for communicating the dynamic system information to an external device, and means for receiving an input from an external device and the at least one characteristic of the communication system (100) is determined in response to this input from an external device. Figure 2 in Vazvan shows and teaches the subscriber units further comprise means (application software 17) for communicating the dynamic system information to an external device, and means for receiving an input from an external device and the at least one characteristic of the communication system is determined in response to this input from an

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external device ("the user may select the optimization criteria with the help of the application, or the application may select them automatically. This naturally requires special application software 17, which can exchange the necessary information with the terminal adaptation functions 18. However, the terminal adaptation functions may carry out the optimization without any interaction with the application" (page 11, lines 16-20))

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the communication system and method of Horneman wherein the subscriber units further comprise means for communicating the dynamic system information to an external device, and means for receiving an input from an external device and the at least one characteristic of the communication system is determined in response to this input from an external device. One would have been motivated to make such a modification in view of the suggestion in Vazvan to allow selection of the optimization criteria.

As to claim 14, Horneman in view of Vazvan discloses a communication system as claimed in claim 12 or 13 wherein the external device is a Smartcard ("if the data terminal equipment and radio unit are separated devices, as they are e.g. in Nokia Mobile Phones' present data concept, they have to be able to communicate with each other. In said data concept the PCMCIA card and the mobile phone are capable of exchanging information over a bus (Nokia Bus)" (page 13, lines 4-7). "PQ selection and the use of the smart card management part (SCMP) and the mobile price information and invoicing systems can solve this problem" (page 14, lines 2-4)).

7. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,560,460 to Horneman et al. in view of Lorimer (EP 0724371 A1).

The Horneman reference discloses a communication system (100) as claimed in any claim 1. However, it does not disclose the dynamic system information is transmitted to a specific group of subscriber units. The Lorimer reference teaches the dynamic system information is transmitted to a specific group of subscriber units ("when a change occurs to the tariff ratings which modifies the tables, the central server 12 determines from the user profile data which handsets require updating. Profile records associated with these handsets will be appropriately flagged, and at the next registration indication a download of the amended tariff information is initiated using the respective SMS or COMS facilities for the network to which the handsets are attached" (page 4, lines 20-24)).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the communication system of Horneman wherein the dynamic system information is transmitted to a specific group of subscriber units, as taught by Lorimer, in order to provide the dynamic system information to only relevant subscriber units simultaneously.

8. Claims 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,560,460 to Horneman et al. in view of Shaheen et al. (U.S. Patent 6,128,490).

As to claim 17, the Horneman reference discloses a communication system as claimed in claim 16. However, it does not disclose the communication system uses a Code Division Multiple Access scheme and the distribution of resource is changed by changing the allocation of spreading codes between the base stations. The Sheheen reference teaches the communication system uses a Code Division Multiple Access scheme and the distribution of resource is changed by changing the allocation of spreading codes between the base stations ("FIG. 4 illustrates

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particular operation 400 of the subscribing unit 103 in conjunction with the base station 106 in determining whether to operate in the 800 MHz band or the PCS band and whether to operate according to the AMPS standard or the CDMA standard” (Col. 9, line 43-47). “Table 1 above illustrates the GOAM (a CDMA capability global access message)” (Table 1 in Col. 10)).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the communication system of Horneman wherein the communication system uses a Code Division Multiple Access scheme and the distribution of resource is changed by changing the allocation of spreading codes between the base stations, as taught by Shaheen, to support a CDMA system.

As to claim 18, the Horneman reference discloses a communication system as claimed in claim 16. However, it does not explicitly disclose the communication system uses a Frequency Division Multiple access scheme and the distribution of resource is changed by changing the allocation of frequencies between the base stations. The Shaheen reference teaches the communication system uses a Frequency Division Multiple access scheme and the distribution of resource is changed by changing the allocation of frequencies between the base stations (“available bandwidth information may be of significant importance in high speed data (HSD) applications wherein a user desires to transmit data via the wireless communication system 100. In such case, the system operator information 212 may indicate the amount of bandwidth available in each frequency band and/or on each available channel in each available frequency band” (Col. 8, lines 27-33)).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the communication system of Horneman wherein the

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communication system uses a Frequency Division Multiple access scheme and the distribution of resource is changed by changing the allocation of frequencies between the base stations, as taught by Shaheen, in order to support a Frequency Division Multiple access system.

### ***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. Sharma et al. (U.S. Patent 6,069,871) discloses traffic allocation and dynamic load balancing in a multiple carrier cellular wireless communication system.
- b. Raghavan et al. (U.S. Patent 6,128,500) discloses method and system to optimize capacity of a CDMA cellular communication system.
- c. Egner et al. (U.S. Patent 6,223,041) discloses dynamic radio resource allocation in a wireless communication system.
- d. Natarajan (U.S. Patent 6,597,913) discloses distributed dynamic channel management in cellular systems.
- e. Cox (U.S. Patent 6,154,643) discloses bandwidth provisioning in a telecommunications system having radio links.


10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Duy K Le whose telephone number is 703-305-5660. The examiner can normally be reached on 8:30 am - 5:00 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward F Urban can be reached on 703-305-4385. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Duy Le  
October 6, 2003

  
EDWARD F. URBAN  
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